Getting Better Acquisition Outcomes

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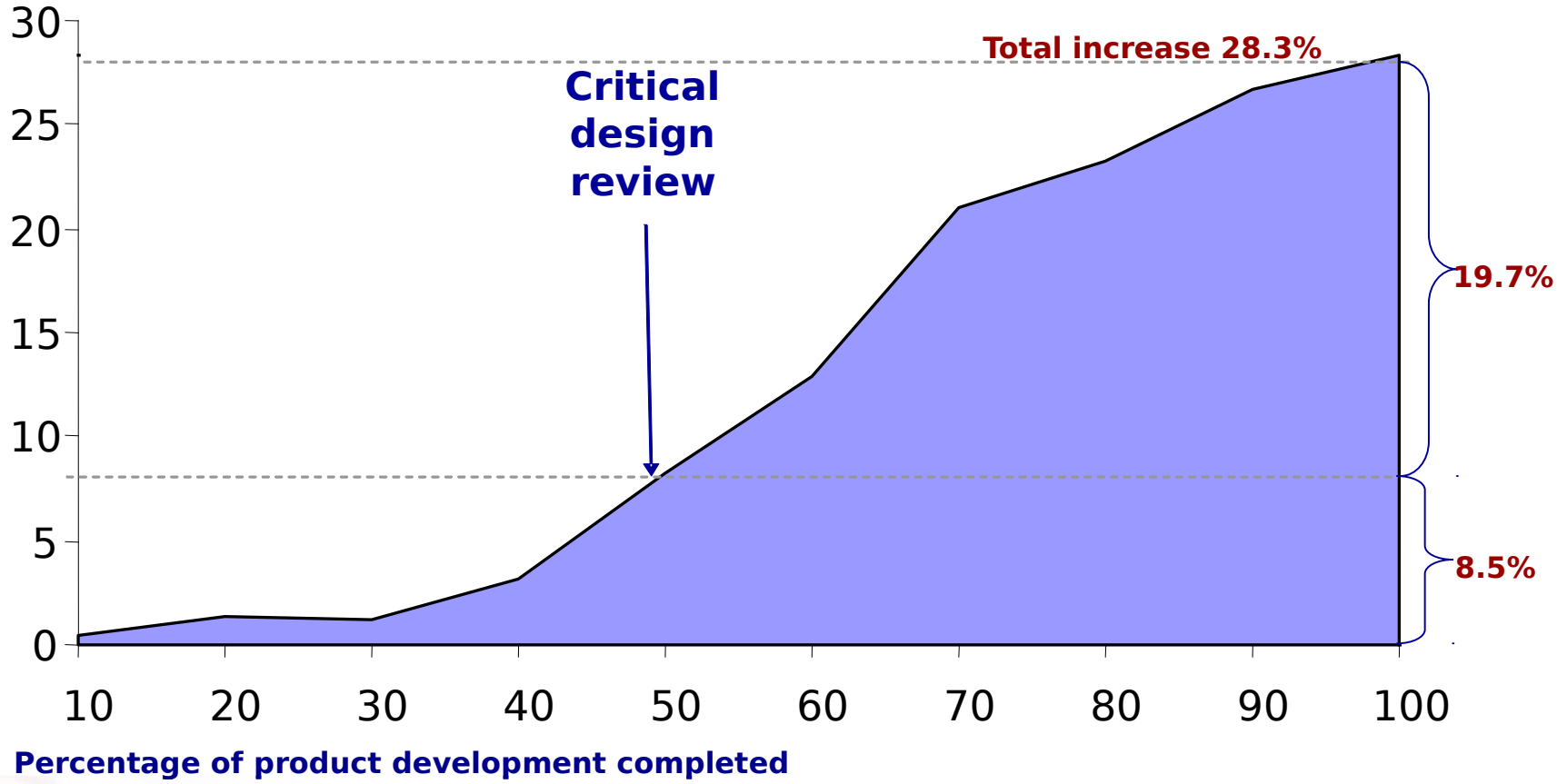
nwanted Outcomes of Acquisition Process

- 12 to 15 year development cycle times
- Delayed delivery of capability
- Requirements creep
- Technology obsolescence
- 30-40% cost growth
- Reduced quantities
- Funding instability
- Management/leadership turnover
- Contractors cannot get into production

Good people are not put in a position to succeed

R&D Cost Growth Experience

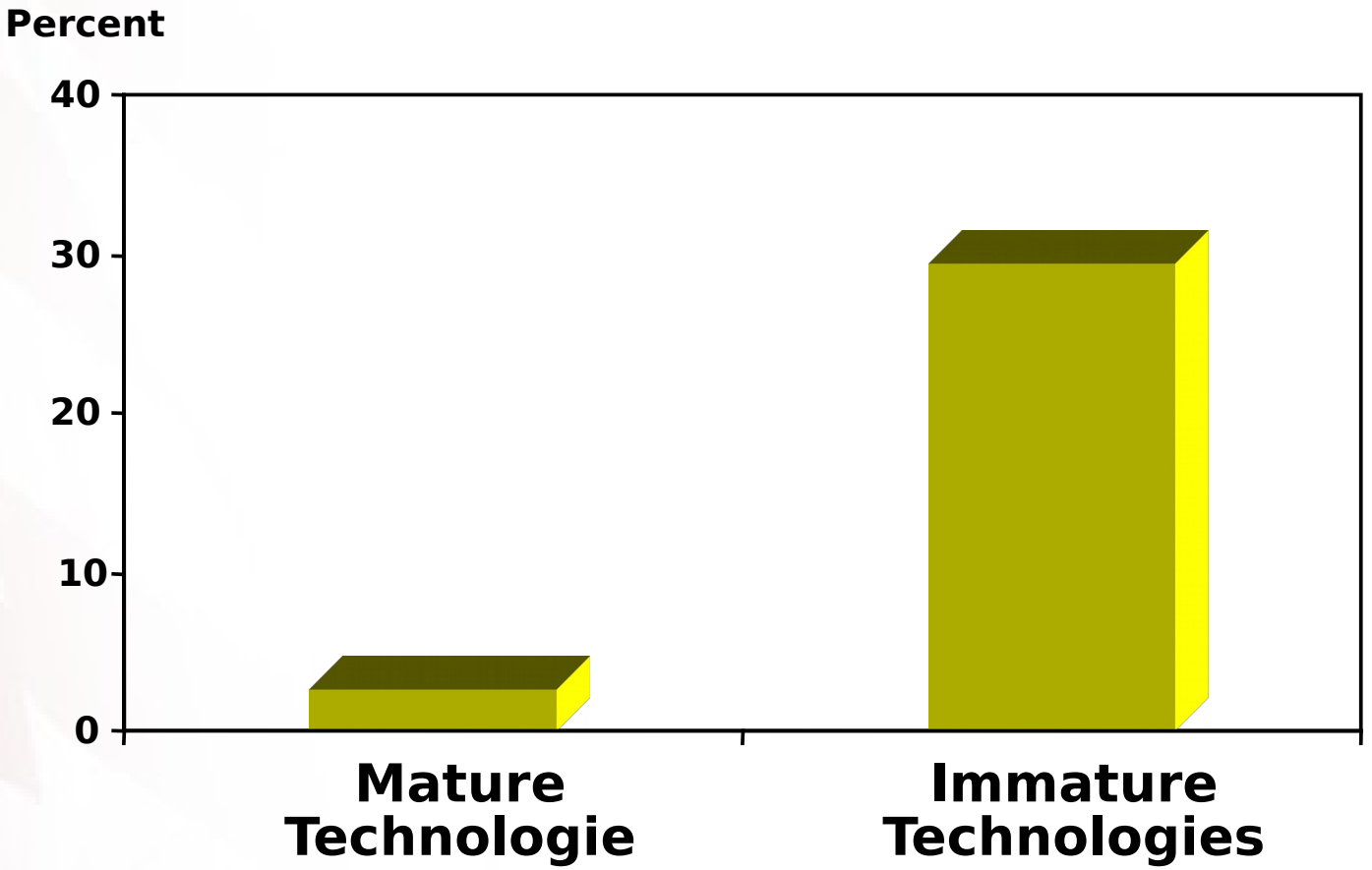
Percentage of RDT&E cost increase over development estimate



Source: *Defense Acquisitions: Assessments of Selected Major Weapon Programs* GAO-06-391. Washington, DC.: March 2006.

Immature Technology Drives Cost Up

Average RDT&E Cost Growth from First Full Estimate



Source: GAO analysis of DOD data.

Cost Growth Robs Buying Power

GAO
Accountability * Integrity * Reliability

	Was	Is
JSF (Joint Strike Fighter)	$200B for 2,900 aircraft	$225B for 2,500 aircraft
FCS (Future Combat Systems)	$86B for 15 brigades	$130B for 15 brigades
SBIRS High (Space-Based Infra Red)	$4B for 5 satellites	$10B for 3 satellites
EFV (Expeditionary Fighting Vehicle)	$8.7B for 1025 vehicles	$13.5B for 593 vehicles
LCS (Littoral Combat Ship)	$1.4B for 6 ships	$1.8B for 4 ships

The Knowledge-Based Approach

A major determinant of program outcomes is the level of knowledge attained at key junctures

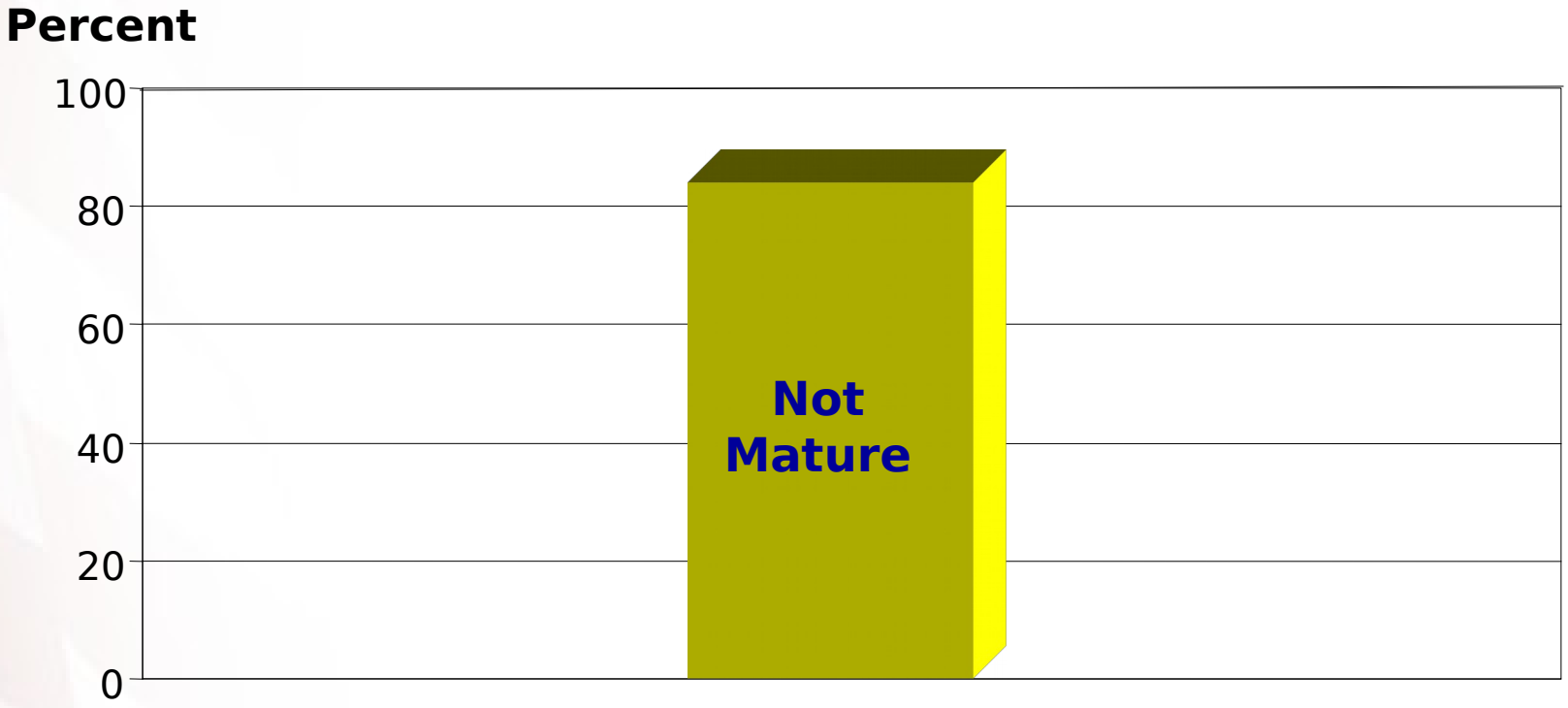
Knowledge Point 1: At milestone B, a match is achieved between the user's needs and the developer's resources (indicator: technology readiness level).

Knowledge Point 2: At Critical Design Review, the product design demonstrates its ability to meet user needs and is stable (indicator: % of engineering drawings released).

Knowledge Point 3: At milestone C, it is demonstrated that the product can be produced within cost, schedule, and quality targets (indicator: % of key processes in statistical control).

Knowledge Point 1: Technology Maturity

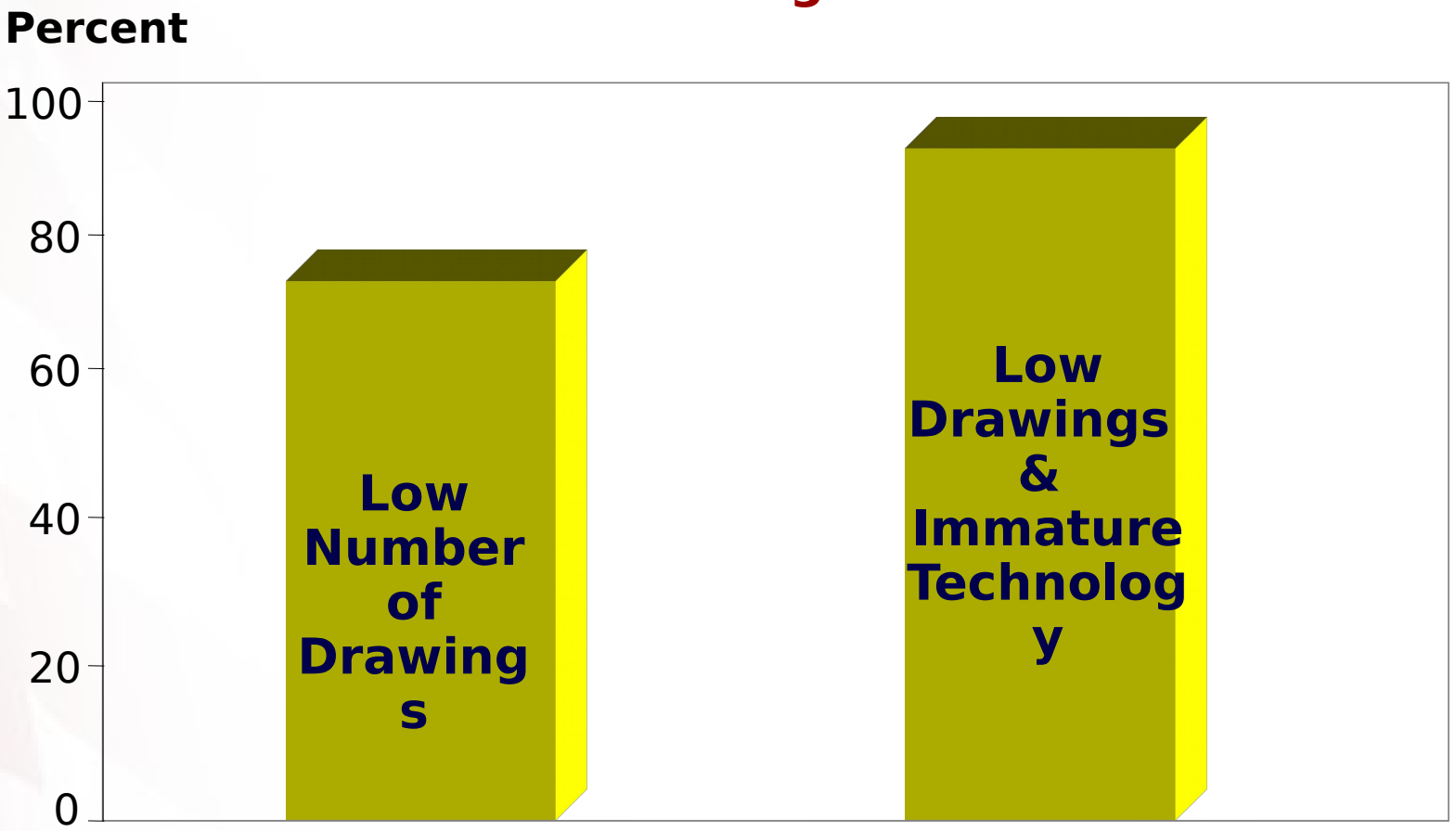
Programs that Did Not Achieve Technology Maturity at Milestone B



Source: GAO analysis of DOD data.

Knowledge Point 2: Design Stability

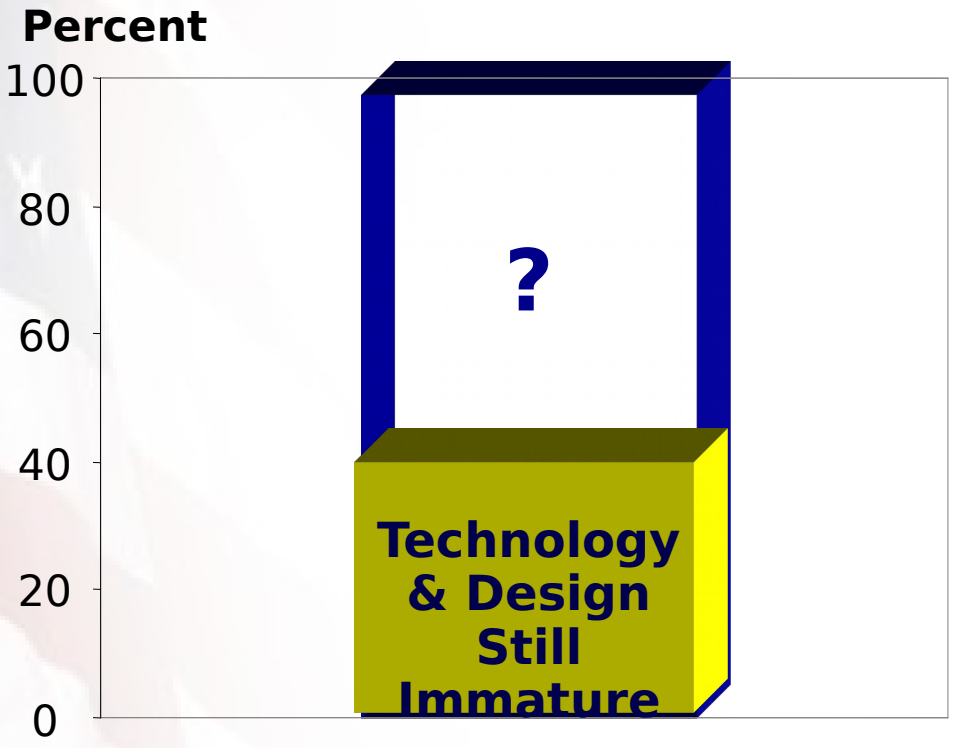
Programs Without Stable Designs at Critical Design Review



Source: GAO analysis of DOD data.

Knowledge Point 3: Production Maturity

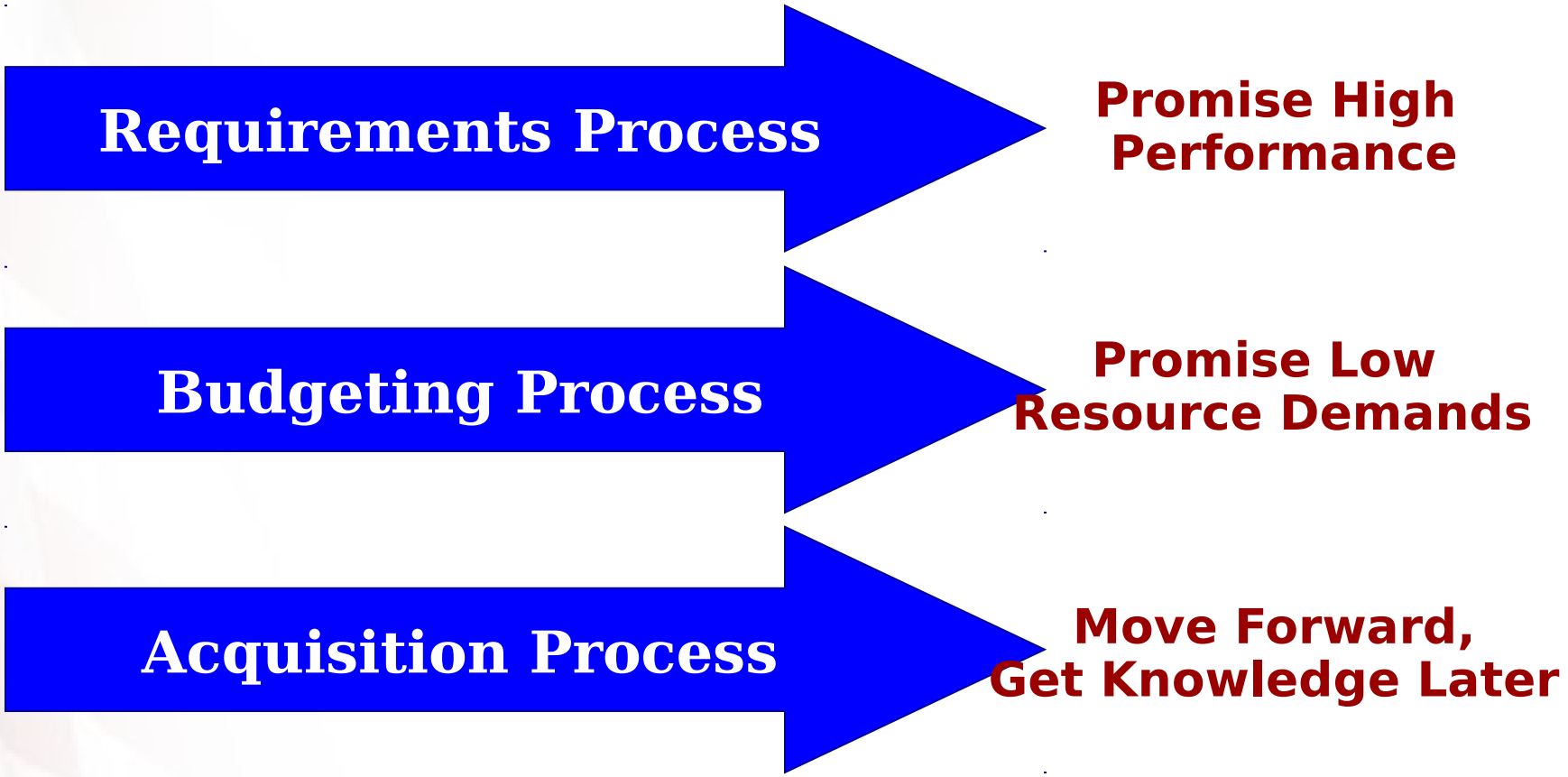
Programs That Did Not Achieve Technology, Design, and Production Maturity by Milestone C



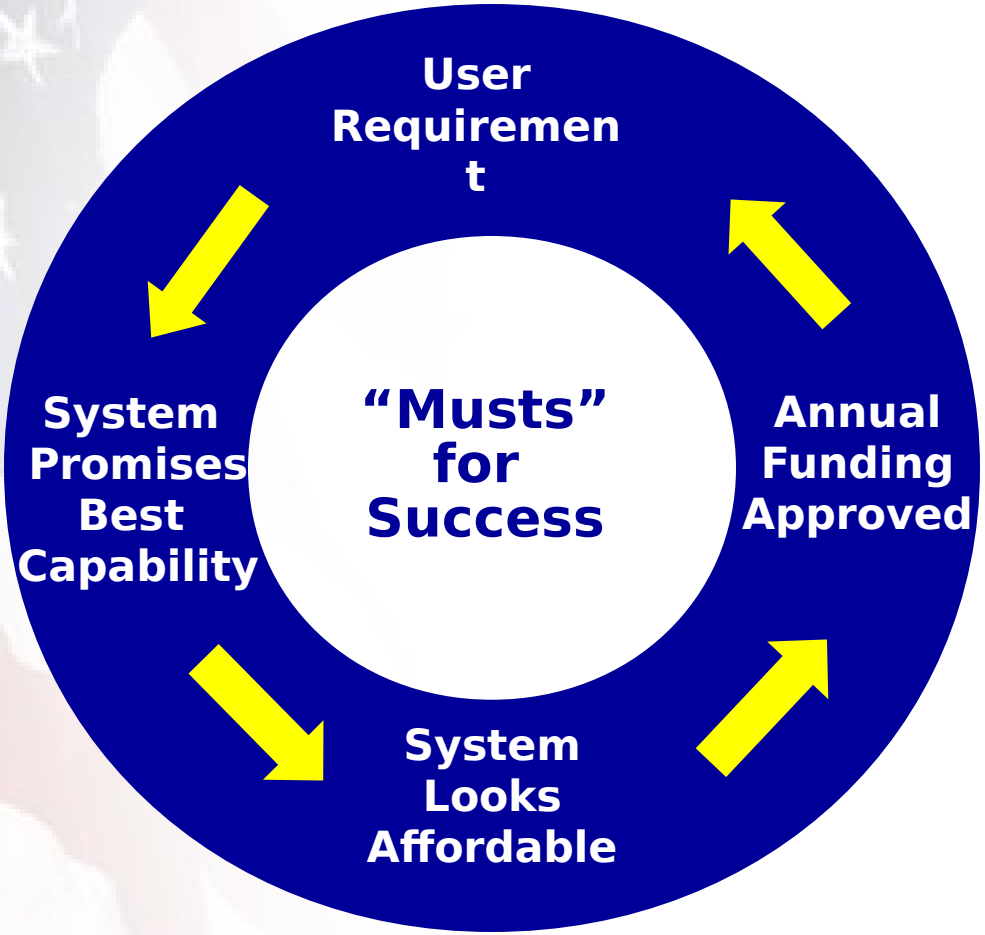
Source: GAO analysis of DOD data.

- Less than 50% of programs test integrated, production-representative prototypes before Milestone C
- Only 2 programs collected statistical process maturity
- Neither have demonstrated process control

Cause: Process Pressures



Cause: Compromised Business Cases



- Sale at program start
- Customer vested early
- Programs generate funds
- Goal>right product @ best price
- Unknowns are accepted
- Realistic cost & testing are not
- Customer will not walk away

The process is not broken; it's in equilibrium.

A Rational Process In Equilibrium

- Same kinds of problems for past 30 years
- Primarily ***not*** due to mistakes, lack of expertise, or unforeseeable events
- It is the consistency of these outcomes—and their imperviousness to reforms, contract types, contractors, acquisition strategies, weapon types, critics, military services, administrations, and Congresses—that leads to a conclusion that the acquisition process may be producing what the participants collectively want or are willing to settle for.
- The acquisition process attempts to meet the diverse needs of its participants by maximizing programs; cost growth, schedule delays, and other problems are the consequences
- It is a rational process that involves good people. It works: this is how programs get money and survive in the real world.
- Policy is not DOD 5000, but rather those actions that are reinforced by decisions. Seen in this light, true policy is to proceed with immature technologies and low cost estimates.

Will More Money Improve Outcomes?

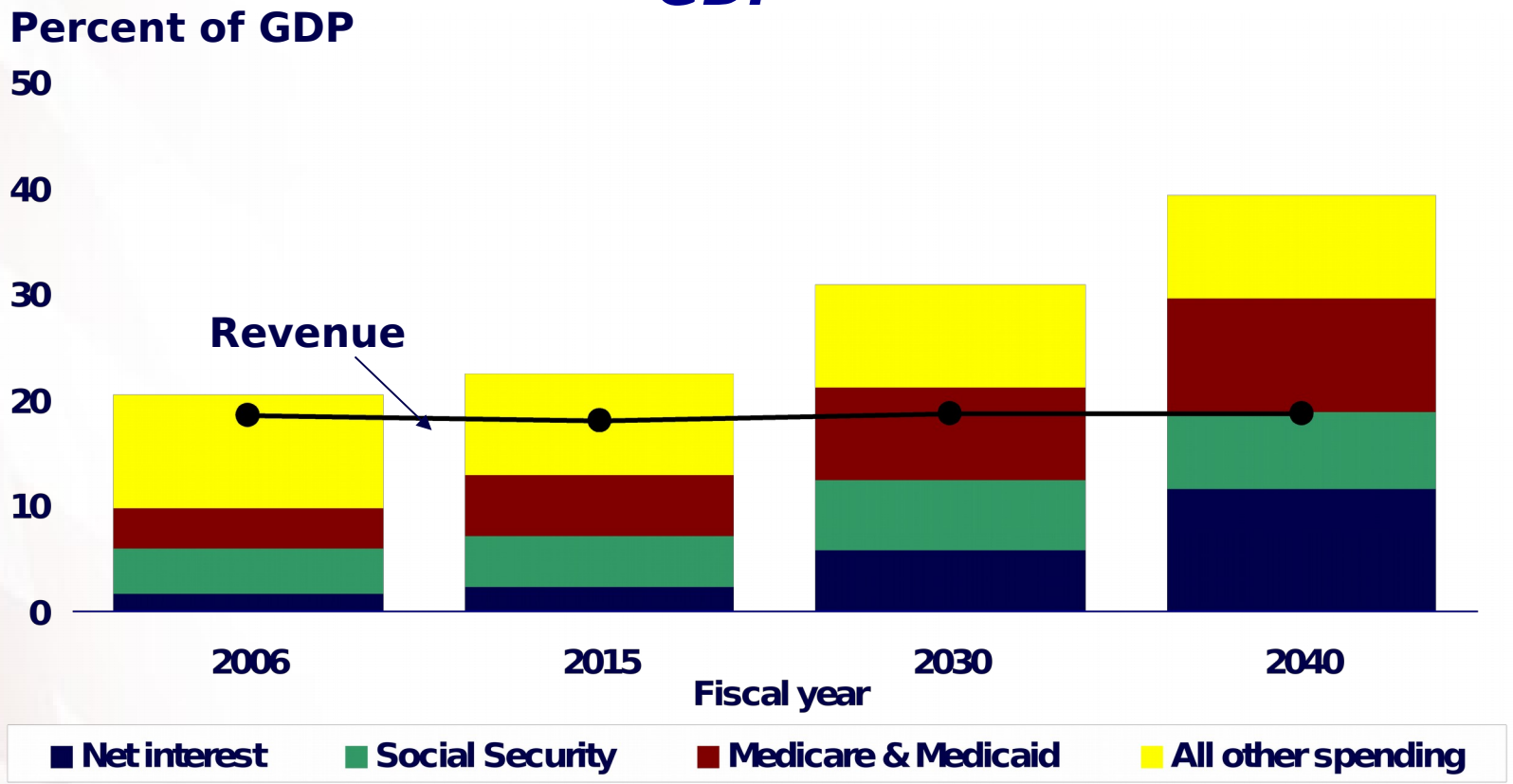
- Funding in DOD investment accounts (RDT&E and procurement) has doubled since 2001:

	2001	2007
Annual Funding in Investment accounts	**$100 billion**	**$170 billion**
Total investment in major weapons	**$750 billion**	**$1.5 trillion**

- Problems, such as cost growth and schedule delays, remain much the same
- More money did not make existing programs well; rather additional unexecutable programs got started

Is More Money Likely?

Revenues and Composition of Spending as a Share of GDP



Source: GAO's August 2007 analysis.

Notes: AMT exemption amount is retained at the 2006 level through 2017 and expiring tax provisions are extended. After 2017, revenue as a share of GDP returns to its historical level of18.3 percent of GDP plus expected revenues from deferred taxes, i.e. taxes on withdrawals from retirement accounts. Medicare spending is based on the Trustees April 2007 projections adjusted for the Centers for Medicare and Medicaid Services alternative assumption that physician payments are not reduced as specified under current law.

What Should Be Done?

What we know:

- Knowledge works. The absence of knowledge is risk. Unstemmed risk becomes time and money.
- When knowledge is lacking, judgments are substituted. Judgments are susceptible to resource pressures. Judgments lean toward optimism.
- Programs proceed with knowledge gaps but without time and money to compensate for risk. Risk mitigation plans are the putty for the gaps.

Barriers to doing what we know to be sound:

- The realism implicit above means fewer needs will be met; the acquisition process will have to say “no” more often. This runs counter to current incentives.
- Changing policy to include best practices and more systems engineering discipline will not work if the incentives in the process remain the same.
- Systems of systems and consolidation of industrial base pose additional challenges to oversight mechanisms.

What to do—*cont'd*

Needed: A significant emotional event

- Wait for fiscal strains to force tradeoffs through the blunt tool of the budget process or act more thoughtfully now.
- Attach costs to knowledge shortfalls and risk mitigation plans
- Allow schedule to constrain the design—consider the limits of humans
- Consider having new funding commitments ***follow*** decisions
- Say "no" to programs that do not measure up; allow program managers to be gatekeepers for their program's executability.